

Blacktown Hotel

Marchese Partners
Architects

BASIX Report

23.11.2021 FINAL

Angie Chacon, Consultant
David Arnott, Associate

1. INTRODUCTION

1.1 SCOPE

This report will provide an assessment of compliance with the Building Sustainability Index (BASIX) for the Blacktown Hotel project, which is comprised of 150 units across one building.

BASIX applies to all residential dwelling types (Class 1, 2 and Part 4) and is an integral part of the development application process in NSW, implemented under the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) and State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 (the BASIX SEPP).

The BASIX assessment tool analyses data relating to the design of proposed dwelling(s), assesses the anticipated water consumption and greenhouse gas emissions levels and determines how this scores against water and energy targets. The expected thermal performance of each proposed unit is also assessed as part of BASIX. For the water and energy targets, the development is assessed on how it is likely to perform against existing dwellings of the same type. All three categories (water, thermal comfort and energy) must meet specific targets before the proposed development can be issued with a BASIX certificate.

This report will provide details on how each category has achieved its prescribed targets, resulting in a compliant BASIX certificate, for the proposed Blacktown Hotel.

1.2 SOURCE DOCUMENTATION

The table below outlines a summary of the documentation used as the basis of this compliance analysis.

Discipline	Drawing Title	Drawing No.	Revision	Date	Custodian
Architectural	Cover sheet	DA0.01	F	2021-09-14	Marchese Partners Architects
Architectural	Survey	DA1.01	D	2021-09-14	Marchese Partners Architects
Architectural	Site Analysis	DA1.02	E	2021-09-14	Marchese Partners Architects
Architectural	Site Plan – Existing	DA1.03	D	2021-09-14	Marchese Partners Architects
Architectural	Site Plan – Proposed	DA1.04	E	2021-09-14	Marchese Partners Architects
Architectural	Urban Design Context Analysis	DA1.05	E	2021-09-14	Marchese Partners Architects
Architectural	Basement 6	DA2.00		2021-09-14	Marchese Partners Architects
Architectural	Basement 5	DA2.01	F	2021-09-14	Marchese Partners Architects
Architectural	Basement 4	DA2.02	F	2021-09-14	Marchese Partners Architects
Architectural	Basement 3	DA2.03	F	2021-09-14	Marchese Partners Architects
Architectural	Basement 2	DA2.04	F	2021-09-14	Marchese Partners Architects
Architectural	Basement 1	DA2.05	F	2021-09-14	Marchese Partners Architects
Architectural	Level Ground	DA2.06	E	2021-09-14	Marchese Partners Architects
Architectural	Level 1	DA2.07	E	2021-09-14	Marchese Partners Architects
Architectural	Level 2	DA2.08	E	2021-09-14	Marchese Partners Architects
Architectural	Level 3-14	DA2.09	G	2021-09-14	Marchese Partners Architects
Architectural	Level 15	DA2.10	G	2021-09-14	Marchese Partners Architects
Architectural	Level 16	DA2.11	G	2021-09-14	Marchese Partners Architects
Architectural	Roof Level	DA2.12	G	2021-09-14	Marchese Partners Architects
Architectural	North Elevation	DA3.01	G	2021-09-14	Marchese Partners Architects
Architectural	South Elevation	DA3.02	G	2021-09-14	Marchese Partners Architects
Architectural	East Elevation	DA3.03	G	2021-09-14	Marchese Partners Architects
Architectural	West Elevation	DA3.04	G	2021-09-14	Marchese Partners Architects
Architectural	Section AA	DA4.01	G	2021-09-14	Marchese Partners Architects
Architectural	Section BB	DA4.02	G	2021-09-14	Marchese Partners Architects
Architectural	Section CC & DD	DA4.04	F	2021-09-14	Marchese Partners Architects
Architectural	GFA	DA5.01	G	2021-09-14	Marchese Partners Architects
Architectural	Storage Schedule	DA5.06	D	2021-09-14	Marchese Partners Architects
Architectural	Cross Ventilation	DA5.11	G	2021-09-14	Marchese Partners Architects
Architectural	Shadow Analysis – Sheet 1	DA5.21	G	2021-09-14	Marchese Partners Architects
Architectural	Shadow Analysis - Sheet 2	DA5.22	G	2021-09-14	Marchese Partners Architects
Architectural	Solar Access - Sheet 1	DA5.23	F	2021-09-14	Marchese Partners Architects
Architectural	Solar Access - Sheet 2	DA5.24	F	2021-09-14	Marchese Partners Architects
Architectural	Solar Access - Sheet 3	DA5.25	F	2021-09-14	Marchese Partners Architects
Architectural	Shadow Study Civic Plaza	DA5.26	G	2021-09-14	Marchese Partners Architects
Architectural	Views	DA5.27	D	2021-09-14	Marchese Partners Architects
Architectural	Exterior Finished	DA5.28	D	2021-09-14	Marchese Partners Architects



2. BASIX SPECIFICATION

2.1 WATER

The Water section of BASIX aims to reduce the potable water consumption of all new residential developments. The benchmark is 90,340 litres of water per person per year (or 247 litres per person per day), which was the average potable water consumption of a pre-BASIX home.

The table below illustrates the BASIX water specification for the development

Water commitments		
Common Area Garden and Lawn	Total area of Lawn to be maintained $\leq 0 \text{ m}^2$ Total area of Garden to be maintained $\leq 137 \text{ m}^2$ No indigenous or low water use species specified	
Common Area Fixtures and appliances	Showerheads	No common facility
	Toilets	4 star
	Taps	4 star
	Clothes washers	No common laundry facility
Sole occupancy unit Fixtures	Showerheads	4 star (>6 but $\leq 7.5 \text{ L/min}$)
	Toilets	4 star
	Kitchen taps	4 star
	Bathroom vanity taps	4 star
	Clothes washer	Not specified
	Dishwasher	4.5 star
Alternative water	Minimum 5,000 L central rainwater tank, harvested from minimum 250m ² of roof areas. Rainwater to be used for landscape irrigation.	
Fire sprinkler test system	Fire sprinkler test water to be contained on a closed loop	

2. BASIX SPECIFICATION

2.2 THERMAL COMFORT

A detailed assessment utilising National House Energy Rating Scheme (NatHERS) accredited software is required in order to verify compliance with the BASIX Thermal Comfort requirements. Compliance with the BASIX thermal comfort section aims to:

- Ensure thermal comfort for a dwelling's occupants, appropriate to the climate and season;
- Reduce greenhouse gas emissions from artificial cooling and heating; and
- Manage peak demand for energy required for cooling and heating, thereby reducing the need for new or upgraded energy infrastructure

Under the simulation method BASIX assigns the maximum allowable heating and cooling loads to a dwelling according to the NatHERS climate regions, based on postcode. Should the modelling demonstrate both heating and cooling loads (or thermal loads) fall below the maximum allowable, the dwellings are deemed to be compliant. The thermal loads are calculated as the amount of energy that would be required to maintain the temperature within an acceptable range and take into account the following.

- The dwelling's construction and insulation; including floors, walls, ceilings and roof; and
- The dwelling's glazing and skylights; based on size, performance, shading and overshadowing.

The applicant must construct all building fabric and glazing in accordance with the specifications listed below.

- **External walls**
 - 100mm Tilt up concrete (or the like) + internal stud and plasterboard
 - External walls insulation \geq R2.0 (insulation value only)
- **Intertenancy walls**
 - Cast concrete walls to lift and stairs walls
 - Plasterboard on studs to all other areas
 - No insulation required
- **Internal walls**
 - Plasterboard on studs
 - No insulation required

- **Slabs and Ceiling**
 - 150mm Concrete slabs
 - Lined with plasterboard ceiling
 - Internal slabs insulation: none specified
 - Minimum R1.1 (insulation value only) to Level 14 units where Level 15 balcony is over habitable areas below
 - Minimum R4.0 (insulation value only) to all Level 15 units where roof is over
- **Ceiling Penetrations**
 - Sealed LED downlights are proposed to all areas with default values modelled.
 - Exhausts are modelled in laundries, kitchen and bathrooms. All exhausts are to be sealed
 - Default lighting input of 1 sealed light per 2.5sqm of ceiling area
- **Roof Colour**
 - Minimum R1.1 insulation (insulation value only) to all balcony/roof slabs
 - Light Colour finish
- **Floor coverings**
 - Default floor covering have been modelled
- **Windows and glazed doors – All values quoted are to be total system values**
 - **Default Specification:**
 - Aluminium, Double glazing, Argon Fill, Clear-Clear (U = 4.5, SHGC = 0.61)
 - **Glazing upgrade #1 (Selected West Facing Living rooms):**
 - Aluminium, Double glazing, Argon Fill, Low Solar Gain low-E -Clear (U = 4.8, SHGC = 0.34)
 - **Glazing upgrade #2 (East Facing Living rooms):**
 - Aluminium Thermally Broken, Double glazing, Argon Fill, Low Solar Gain low-E -Clear (U = 3.0, SHGC = 0.26)
- **Window and glazed door operability**
 - Window and glazed door operability as per stamped plan set
- **Shading devices**
 - Full height, 1200mm wide external screens, capable of filtering 80% of summer solar light, have been specified to living room windows of selected East facing units.

2. BASIX SPECIFICATION

2.3 ENERGY

The Energy section of BASIX aims to reduce the greenhouse gas (GHG) emissions of all new residential dwellings. The benchmark is 3,292 kilograms of carbon dioxide per person per year, which was the average for pre-BASIX homes. The current specification complies with the minimum BASIX energy requirements.

The table below illustrates the BASIX energy specification for the development.

Energy commitments – Common Areas		
Area	Ventilation	Lighting
Car park areas	Supply + exhaust with CO monitor + VSD fan	LED with zoned switching with motion sensors
Lifts	N/A	LED connected to lift call button
Comms – Ground Level	Air conditioned, continuous	LED, Manual on/off
Garbage room – Ground Level	Exhaust only, no efficiency measure required	ED, Manual on/off
Garbage room – Apartment levels	Exhaust only, no efficiency measure required	LED, Motion sensors
Outdoor community rooftop	N/A	LED, Daylight sensors
Plant rooms- Basement	Exhaust only thermostatically controlled	LED, Manual on/off
Plant Rooms - Roof top	Exhaust only running continuously	LED, Manual on/off
Service rooms – Apartment floors	Exhaust only running continuously	LED, Manual on/off
Office	Air conditioning with time clock or BMS controlled	LED, motion sensors
WC	Exhaust only with time clock or BMS controlled	LED, Manual on/timer off
Store	Exhaust only with time clock or BMS controlled	LED, Manual on/timer off
Ground floor lobby	Air conditioning with time clock or BMS controlled	LED, time clocks
Hallways	Supply only with time clock or BMS controlled	LED, time clocks

Energy commitments – Central Systems and Dwelling Details		
Central Systems		
Hot water	System type	Gas-fired boiler
	Piping insulation	Minimum R1.0
Cooling system	System type	No central cooling system
	Energy source	N/A
	Heat rejection method	N/A
	Unit efficiency	N/A
Heating system	System type	No central heating system
	Energy source	N/A
Photovoltaic system	Minimum 40 kWp system to be installed	
Lifts	Gearless traction with V V V F motor and regenerative drive	
Building Management System (BMS)	To be installed	
Active Power factor correction (PFC)	To be installed	
Dwelling Details		
Mechanical ventilation	Bathrooms	Individual fan, ducted to façade or roof Manual switch on / timer off
	Kitchen	Individual fan, ducted to façade or roof Manual switch on / off
	Laundry	Individual fan, ducted to façade or roof Manual switch on / timer off
Cooling	Living	Single Phase Airconditioning, EER 3.0-3.5
	Bedroom	Single Phase Airconditioning, EER 3.0-3.5
Heating	Living	Single Phase Airconditioning, EER 3.0-3.5
	Bedroom	Single Phase Airconditioning, EER 3.0-3.5
Hot water	Central hot water system/ No individual system	
Artificial lighting	LED lighting throughout with dedicated fittings	
Appliances	Cooktop & oven	Gas cooktop and electric oven
	Refrigerator	Not specified
		Ventilated fridge space
	Dishwasher	3.5 Stars
	Clothes Washer	Not specified
	Clothes Dryer	2 star

APPENDIX A – THERMAL COMFORT RESULTS

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # 22Y7KF6XUU

Accreditation # HERA10089

Thermal performance specifications							
Unit No.	No. of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades *
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
Level 2							
0201	1	59.9	0.0	34.6	59.4	5.7	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0202	2	76.1	0.0	21.3	52.3	6.7	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0203	2	72.6	0.0	33.0	58.4	5.8	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0204	1	52.5	0.0	15.7	61.3	6.5	Glazing upgrade #2 (U3.0 SHGC 0.26) throughout + Double screens to Living
0205	1	62.3	0.0	18.7	56.3	6.6	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0206	1	51.8	0.0	12.9	31.7	7.9	None
0207	1	54.5	0.0	10.2	61.3	6.8	Glazing upgrade #2 (U3.0 SHGC 0.26) throughout
0208	1	52.5	0.0	25.5	58.4	6.2	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0209	2	72.6	0.0	42.8	52.7	5.6	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0210	2	76.1	0.0	25.4	54.7	6.3	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0211	1	59.9	0.0	31.0	59.9	5.8	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
Level 3							
0301	1	59.9	0.0	37.4	55.0	5.8	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0302	2	76.1	0.0	23.6	59.0	6.2	None
0303	2	72.6	0.0	35.2	60.3	5.6	None
0304	1	52.5	0.0	18.7	63.2	6.3	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0305	1	62.3	0.0	22.7	55.7	6.4	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0306	1	51.8	0.0	7.9	30.0	14.5	None
0307	1	54.5	0.0	14.1	59.4	6.7	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0308	1	52.5	0.0	26.4	50.3	6.5	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0309	2	72.6	0.0	43.7	56.4	5.4	None
0310	2	76.1	0.0	26.9	62.3	5.9	None
0311	1	59.9	0.0	33.7	55.5	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
Level 4							
0401	1	59.9	0.0	37.4	54.5	5.8	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0402	2	76.1	0.0	23.6	59.0	6.2	None
0403	2	72.6	0.0	35.1	60.9	5.6	None
0404	1	52.5	0.0	17.0	52.9	6.8	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0405	1	62.3	0.0	20.8	47.6	6.9	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0406	1	51.8	0.0	14.8	29.7	7.9	None
0407	1	54.5	0.0	14.1	57.7	6.7	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0408	1	52.5	0.0	28.0	51.0	6.4	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0409	2	72.6	0.0	43.5	56.7	5.4	None
0410	2	76.1	0.0	26.7	62.4	5.9	None
0411	1	59.9	0.0	33.9	54.8	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # 22Y7KF6XUU

Accreditation # HERA10089

Thermal performance specifications							
Unit No.	No. of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades *
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
Level 5							
0501	1	59.9	0.0	36.6	54.5	5.8	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0502	2	76.1	0.0	23.8	58.7	6.2	None
0503	2	72.6	0.0	35.7	60.0	5.6	None
0504	1	52.5	0.0	17.4	52.4	6.8	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0505	1	62.3	0.0	21.1	46.9	6.9	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0506	1	51.8	0.0	15.0	29.2	7.9	None
0507	1	54.5	0.0	14.4	57.1	6.7	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0508	1	52.5	0.0	28.4	50.1	6.4	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0509	2	72.6	0.0	43.9	57.0	5.4	None
0510	2	76.1	0.0	27.3	61.6	5.9	None
0511	1	59.9	0.0	34.3	54.7	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
Level 6							
0601	1	59.9	0.0	37.7	54.1	5.8	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0602	2	76.1	0.0	24.0	58.6	6.2	None
0603	2	72.6	0.0	35.8	60.1	5.6	None
0604	1	52.5	0.0	17.6	52.1	6.8	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0605	1	62.3	0.0	21.3	46.4	6.9	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0606	1	51.8	0.0	15.2	29.0	7.9	None
0607	1	54.5	0.0	14.4	57.1	6.7	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0608	1	52.5	0.0	28.6	49.4	6.4	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0609	2	72.6	0.0	44.1	56.7	5.4	None
0610	2	76.1	0.0	27.5	61.4	5.9	None
0611	1	59.9	0.0	34.5	54.2	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
Level 7							
0701	1	59.9	0.0	37.9	53.8	5.8	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0702	2	76.1	0.0	23.3	59.3	6.2	None
0703	2	72.6	0.0	36.1	60.5	5.6	None
0704	1	52.5	0.0	17.6	51.8	6.8	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0705	1	62.3	0.0	21.5	46.0	6.9	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0706	1	51.8	0.0	15.5	29.1	7.9	None
0707	1	54.5	0.0	14.8	55.8	6.8	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0708	1	52.5	0.0	28.9	48.9	6.4	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0709	2	72.6	0.0	44.3	56.2	5.4	None
0710	2	76.1	0.0	26.7	61.2	5.9	None

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Accreditation # HERA10089

Thermal performance specifications							
Unit No.	No. of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades *
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
0711	1	59.9	0.0	34.8	53.6	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
Level 8							
0801	1	59.9	0.0	38.0	53.3	5.8	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0802	2	76.1	0.0	24.4	57.9	6.2	None
0803	2	72.6	0.0	36.3	59.6	5.6	None
0804	1	52.5	0.0	17.6	51.5	6.9	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0805	1	62.3	0.0	21.6	45.5	6.9	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0806	1	51.8	0.0	15.6	28.9	7.9	None
0807	1	54.5	0.0	14.9	55.2	6.8	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0808	1	52.5	0.0	29.1	48.3	6.4	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0809	2	72.6	0.0	44.5	56.3	5.4	None
0810	2	76.1	0.0	27.8	60.9	5.9	None
0811	1	59.9	0.0	34.9	53.6	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
Level 9							
0901	1	59.9	0.0	38.1	53.4	5.8	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
0902	2	76.1	0.0	24.5	58.0	6.2	None
0903	2	72.6	0.0	36.5	59.0	5.6	None
0904	1	52.5	0.0	17.6	51.5	6.9	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0905	1	62.3	0.0	21.6	45.5	6.9	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0906	1	51.8	0.0	15.7	28.7	7.9	None
0907	1	54.5	0.0	15.0	54.7	6.8	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
0908	1	52.5	0.0	29.1	48.3	6.4	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
0909	2	72.6	0.0	44.6	55.9	5.4	None
0910	2	76.1	0.0	28.0	60.8	5.9	None
0911	1	59.9	0.0	35.1	53.3	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
Level 10							
1001	1	59.9	0.0	39.6	50.4	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
1002	2	76.1	0.0	25.9	55.7	6.3	None
1003	2	72.6	0.0	37.8	56.0	5.7	None
1004	1	52.5	0.0	18.7	47.0	7.0	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
1005	1	62.3	0.0	22.9	41.2	7.1	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
1006	1	51.8	0.0	16.7	26.9	8.0	None
1007	1	54.5	0.0	15.9	50.8	6.9	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
1008	1	52.5	0.0	30.4	44.9	6.6	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
1009	2	72.6	0.0	45.9	52.3	5.5	None

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Certificate # 22Y7KF6XUU

Accreditation # HERA10089

Thermal performance specifications							
Unit No.	No. of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades *
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
1010	2	76.1	0.0	29.5	57.9	5.9	None
1011	1	59.9	0.0	35.1	53.3	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
Level 11							
1101	1	59.9	0.0	40.1	50.3	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
1102	2	76.1	0.0	26.1	55.3	6.3	None
1103	2	72.6	0.0	38.0	55.6	5.7	None
1104	1	52.5	0.0	18.8	46.9	7.0	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
1105	1	62.3	0.0	22.9	41.1	7.1	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
1106	1	51.8	0.0	16.8	26.6	8.0	None
1107	1	54.5	0.0	16.0	50.2	6.9	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
1108	1	52.5	0.0	30.5	44.9	6.6	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
1109	2	72.6	0.0	45.9	52.3	5.5	None
1110	2	76.1	0.0	29.5	57.9	5.9	None
1111	1	59.9	0.0	36.6	50.6	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
Level 12							
1201	1	59.9	0.0	40.1	50.3	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
1202	2	76.1	0.0	26.1	55.3	6.3	None
1203	2	72.6	0.0	38.0	55.6	5.7	None
1204	1	52.5	0.0	18.9	46.4	7.0	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
1205	1	62.3	0.0	23.1	40.8	7.1	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
1206	1	51.8	0.0	16.9	26.5	8.0	None
1207	1	54.5	0.0	16.1	49.9	6.9	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
1208	1	52.5	0.0	30.7	44.3	6.6	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
1209	2	72.6	0.0	46.0	52.1	5.5	None
1210	2	76.1	0.0	29.5	57.6	5.9	None
1211	1	59.9	0.0	36.8	49.8	6.0	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
Level 13							
1301	1	59.9	0.0	43.9	52.0	5.6	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
1302	2	76.1	0.0	28.5	55.7	6.1	None
1303	2	72.6	0.0	38.2	55.3	5.7	None
1304	1	52.5	0.0	30.5	57.5	5.9	Glazing upgrade #2 (U3.0 SHGC 0.26) throughout
1305	1	62.3	0.0	28.8	47.8	6.5	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows
1306	1	51.8	0.0	17.0	26.5	8.0	None
1307	1	54.5	0.0	18.4	51.0	6.8	Glazing upgrade #2 (U3.0 SHGC 0.26) to all living room windows
1308	1	52.5	0.0	43.8	53.2	5.6	Glazing upgrade #2 (U3.0 SHGC 0.26) to east facing living room windows

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # 22Y7KF6XUU

Accreditation # HERA10089

Thermal performance specifications							
Unit No.	No. of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades *
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
1309	2	72.6	0.0	46.1	52.4	5.5	None
1310	2	76.1	0.0	31.8	58.2	5.9	None
1311	1	59.9	0.0	40.5	51.3	5.8	Glazing upgrade #1 (U4.8 SHGC 0.34) to living room windows
Level 15							
1501	3	118.5	0.0	39.2	40.8	6.3	Glazing upgrade #1 (U4.8 SHGC 0.34) throughout
1502	3	91.2	0.0	33.7	50.1	6.2	Glazing upgrade #1 (U4.8 SHGC 0.34) throughout
1503	3	83.5	0.0	45.9	37.6	6.2	Glazing upgrade #1 (U4.8 SHGC 0.34) throughout
1504	2	79.4	0.0	32.1	46.8	6.4	Glazing upgrade #1 (U4.8 SHGC 0.34) throughout
1505	2	75.9	0.0	57.2	29.2	6.0	Glazing upgrade #1 (U4.8 SHGC 0.34) throughout
1506	3	91.2	0.0	40.3	47.7	5.9	Glazing upgrade #1 (U4.8 SHGC 0.34) throughout
1507	3	118.5	0.0	36.1	48.0	6.1	Glazing upgrade #1 (U4.8 SHGC 0.34) throughout

APPENDIX B – NATHERS CERTIFICATE

Nationwide House Energy Rating Scheme — Class 2 summary

NatHERS Certificate No. 22Y7KF6XUU

Generated on 23 Nov 2021 using See individual certificates

Property

Address 34-46 Flushcombe Road, Blacktown, NSW, 2148

Lot/DP

NatHERS climate zone

Accredited assessor



Kavita Gusain

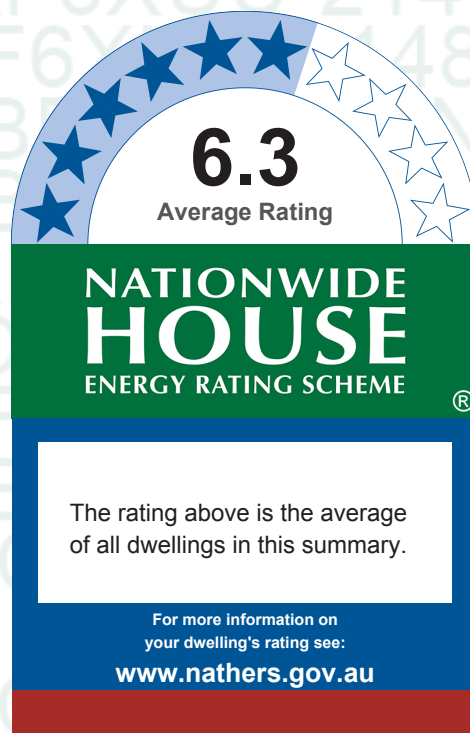
Umow Lai

kavita.gusain@umowlai.com.au

+61 3 9249 0249

Accreditation No. HERA10089

Assessor Accrediting Organisation HERA



Verification

To verify this certificate, scan the QR code or visit

<https://www.fr5.com.au/QRCodeLanding?PublicId=22Y7KF6XUU&GrpCert=1> When using either link, ensure you are visiting www.fr5.com.au.

Summary of all dwellings

Certificate number and link	Unit number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
L7GY3PY4A2	0201	34.6	59.4	94	5.7
0LOLKB845	0202	21.3	52.3	73.6	6.7
CWHMWFE87	0203	33	58.4	91.4	5.8
YYGB058ZAZ	0204	15.7	61.3	77	6.5
W9HHNHIS40H	0205	18.7	56.3	75	6.6
QCFV4VSL5	0206	12.9	31.7	44.6	7.9
5HC1JB44IL	0207	10.2	61.3	71.5	6.8

Continued over

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.

Summary of and links to all dwellings (continued)

Certificate number and link	Unit number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
7JP2WX9E61	0208	25.5	58.4	83.9	6.2
J51C0CA9BY	0209	42.8	52.7	95.5	5.6
4FU3BKHO6T	0210	25.4	54.7	80.1	6.3
5Q8T6ROQBF	0211	31	59.9	90.9	5.8
6PV580GL9U	0301	36.6	54.5	91.1	5.8
K2PR6TSV53	0302	23.3	59.3	82.6	6.2
MGLFDYEQ01	0303	35.1	60.9	96	5.6
HK96UAJ657	0304	20.1	62.9	83	6.2
4SRYV4DVIA	0305	22.5	55.6	78.1	6.4
FB1QR7YXV4	0306	14.5	30	44.5	7.9
70ACYFDGBR	0307	13.9	58.6	72.5	6.7
NRIWN0HL8X	0308	30.8	61.9	92.7	5.8
FVBSPY5AA5	0309	43.3	57	100.3	5.4
T0DXCL6QYT	0310	26.7	62.3	89	5.9
UORJ6L3094	0311	33.7	55.5	89.2	5.9
JFD4IOYJR9	0401	37.4	54.5	91.9	5.8
6BSI2EGQ7L	0402	23.6	59	82.6	6.2
EWDXINSQPA	0403	35.4	61.2	96.6	5.6
JP8WI8J5O0	0404	17	52.9	69.9	6.8
R59EFUVUQR	0405	20.8	47.6	68.4	6.9
XHFAWB4DJN	0406	14.8	29.7	44.5	7.9
FCQWMYUXGC	0407	14.1	57.7	71.8	6.7
UPJJG8A6UZ	0408	28	51	79	6.4
7KCO8SJNQQ	0409	43.5	56.7	100.2	5.4
HMEKKN8LTI	0410	26.9	61.8	88.7	5.9
QZSE32976N	0411	33.9	54.8	88.7	5.9
TLOHEE7DPC	0501	37.5	54.3	91.8	5.8
0RYCJ0513Y	0502	23.8	58.7	82.5	6.2
K1KP1PBN14	0503	35.7	60	95.7	5.6
Y9T8RJ0T31	0504	17.4	52.4	69.8	6.8
QK0KQPDDMJ	0505	21.1	46.9	68	6.9
ZPLS4G9CFK	0506	15	29.2	44.2	7.9
LUWX5URLDD	0507	14.4	57.1	71.5	6.7
VCLJFRAFWY	0508	28.4	50.1	78.5	6.4
TTTHYPPTDJ	0509	43.9	57	100.9	5.4
T2OPYY3GTF	0510	27.3	61.6	88.9	5.9
4ABZ830SN6	0511	34.3	54.7	89	5.9

Continued over

Summary of and links to all dwellings (continued)

Certificate number and link	Unit number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
IOMTCJ1KYO	0601	37.7	54.1	91.8	5.8
4TATYSAJTY	0602	24	58.6	82.6	6.2
WXA7983MDH	0603	35.8	60.2	96	5.6
XDTG51RH7F	0604	17.6	52.1	69.7	6.8
4YIMDZVSQ7	0605	21.3	46.4	67.7	6.9
MKXNXEMSY5	0606	15.2	29	44.2	7.9
H972DZDHUQ	0607	14.5	56.5	71	6.8
H1N8CU5K17	0608	28.6	49.4	78	6.4
AFBLQ1JQBJ	0609	44.1	56.7	100.8	5.4
L55X3ONQ8B	0610	27.5	61.4	88.9	5.9
79J0MQMMMJ	0611	34.5	54.2	88.7	5.9
S728WE5AJZ	0701	37.9	53.8	91.7	5.8
JOWJ1P7ZWV	0702	23.3	59.3	82.6	6.2
DKH2JTXA74	0703	36.1	60.5	96.6	5.6
HQC3E4GYVH	0704	17.6	51.8	69.4	6.8
NPHNGLK519	0705	21.5	46	67.5	6.9
L4P0PSXS9U	0706	15.5	29.1	44.6	7.9
YYLXPCVED3	0707	14.8	55.8	70.6	6.8
CV642VPND0	0708	28.9	48.9	77.8	6.4
0GW4DA9F3U	0709	44.3	56.2	100.5	5.4
U22OOGREN0	0710	27.6	61.2	88.8	5.9
3LRVYDVPKF	0711	34.8	53.6	88.4	5.9
B4P9GMY8LJ	0801	38	53.3	91.3	5.8
PBES1QSUFA	0802	24.4	57.9	82.3	6.2
7RYWM35OKO	0803	36.3	59.6	95.9	5.6
2SWYT4YMHU	0804	17.6	51.5	69.1	6.9
PYPNRMi661	0805	21.6	45.5	67.1	6.9
JBLULA0X1X	0806	15.6	28.9	44.5	7.9
NBRITTKUP5Z	0807	14.9	55.2	70.1	6.8
WZOYQGBZCB	0808	29.1	48.3	77.4	6.4
DF2CQX0L2Y	0809	44.5	56.3	100.8	5.4
5HGL2MV8O3	0810	27.8	60.9	88.7	5.9
2RXHA5OIUC	0811	34.8	53.6	88.4	5.9
MTZ2LCJOSC	0901	38.1	53.4	91.5	5.8
9CMFHSXQ6K	0902	24.5	58	82.5	6.2
RCFYK4SGHQ	0903	36.5	59	95.5	5.6

Continued over

Summary of and links to all dwellings (continued)

Certificate number and link	Unit number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
EMNZQQMBLR	0904	17.6	51.5	69.1	6.9
9CETEBCEFE	0905	21.6	45.5	67.1	6.9
WPZBTMT2NS	0906	15.7	28.7	44.4	7.9
E92GO1FMZM	0907	15	54.7	69.7	6.8
VNVPSU53B3	0908	29.1	48.3	77.4	6.4
DF47EPFIO1	0909	44.6	55.9	100.5	5.4
W55PZK9BIW	0910	28	60.8	88.8	5.9
06CEIQQ12M	0911	34.9	53.6	88.5	5.9
WXHHI2Q6JM	1001	39.6	50.4	90	5.9
1EXQLWVVQP	1002	25.9	55.7	81.6	6.3
8ZN5AJF5P8	1003	37.8	56	93.8	5.7
51C2567XK0	1004	18.7	47	65.7	7
FHMM3FJ451	1005	22.9	41.2	64.1	7.1
YLPNB5AUDL	1006	16.7	26.9	43.6	8
QGMHZ82L15	1007	15.9	50.8	66.7	6.9
4DDCL6SDLG	1008	30.4	44.9	75.3	6.6
KLVOQDGN4F	1009	45.8	53.2	99	5.4
YJZS1VNTNQ	1010	29.3	58.3	87.6	5.9
PXVXTSTQB5	1011	36.6	50.8	87.4	5.9
VB093QJ7TW	1101	39.9	50.5	90.4	5.9
KYMED5M9MS	1102	26	55.5	81.5	6.3
3IC3YAPZRW	1103	37.9	56.2	94.1	5.7
VA3GWFHLZP	1104	18.8	46.9	65.7	7
QYVY18609O	1105	22.9	41.1	64	7.1
TQCUAK9DBX	1106	16.8	26.6	43.4	8
5N70JY2KCX	1107	16	50.2	66.2	6.9
OYP8KNJV4U	1108	30.5	44.9	75.4	6.6
UXYV9RRWQR	1109	45.9	52.3	98.2	5.5
KZH4W8RL14	1110	29.5	57.9	87.4	5.9
ILHHEPLCZQ	1111	36.6	50.6	87.2	5.9
2EN1MSEWYD	1201	40.1	50.3	90.4	5.9
CF5NAHMMW6Z	1202	26.1	55.3	81.4	6.3
71GXH2UQQB	1203	38	55.6	93.6	5.7
TZ0VWRJTEW	1204	18.9	46.4	65.3	7
J521W7CFXH	1205	23.1	40.8	63.9	7.1
NZ1AI5EOHC	1206	16.9	26.5	43.4	8

Continued over

Summary of and links to all dwellings (continued)

Certificate number and link	Unit number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
KL1O77SFCQ	1207	16.1	49.9	66	6.9
B2R5I576FZ	1208	30.7	44.3	75	6.6
I1NI7ZWUHA	1209	46	52.1	98.1	5.5
Q820FD2TNP	1210	29.5	57.6	87.1	5.9
CE2JS7JNMH	1211	36.8	49.8	86.6	6
X3IGKLV RMY	1401	43.8	51.8	95.6	5.6
G88MUQ67HB	1402	28.5	55.9	84.4	6.1
Q9IPN2JPYJ	1403	38.2	55.3	93.5	5.7
OCA7JEVDK0	1404	30.6	57.5	88.1	5.9
JWQJH3VDVJ	1405	28.8	47.8	76.6	6.5
6G84SSST9V	1406	17	26.5	43.5	8
G4C9DEGRNM	1407	18.4	51	69.4	6.8
Y36XF5J7UX	1408	43.8	53.1	96.9	5.6
57PQWRNNIU	1409	46.1	52.4	98.5	5.5
FQ0DVOGJMA	1410	31.8	58.2	90	5.9
U2L6BOXE5B	1411	40.4	51.5	91.9	5.8
6L5I0I1T1E	1501	39.2	40.8	80	6.3
D5GWVWU241	1502	33.7	50.1	83.8	6.2
2Z0ZEO1UFF	1503	45.9	37.6	83.5	6.2
O7ESOG8A82	1504	32.1	46.8	78.9	6.4
NVD01SYNLD	1505	57.2	29.2	86.4	6
7JWLYMT3VH	1506	40.3	47.7	88	5.9
2DTE82PUU4	1507	36.1	48	84.1	6.1
Average		28.7	51.4	80.1	6.3

Explanatory notes

About this report

This summary rating is the average rating of all NCC Class 2 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances, or energy production of solar panels. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO). AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content, input and creation of the NatHERS Certificate is by the assessor. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

APPENDIX C – BASIX CERTIFICATES

BASIX[®]Certificate

Building Sustainability Index www.basix.nsw.gov.au

Multi Dwelling

Certificate number: 1162647M_02

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 10/09/2020 published by the Department. This document is available at www.basix.nsw.gov.au

This certificate is a revision of certificate number 1162647M lodged with the consent authority or certifier on 12 March 2021 with application SPP-21-00002.

It is the responsibility of the applicant to verify with the consent authority that the original, or any revised certificate, complies with the requirements of Schedule 1 Clause 2A, 4A or 6A of the Environmental Planning and Assessment Regulation 2000

Secretary

Date of issue: Tuesday, 23 November 2021

To be valid, this certificate must be lodged within 3 months of the date of issue.



Planning,
Industry &
Environment

Project summary

Project name	Blacktown Hotel_02
Street address	34-46 Flushcombe Road Blacktown 2148
Local Government Area	Blacktown City Council
Plan type and plan number	deposited DP591040
Lot no.	8
Section no.	-
No. of residential flat buildings	1
No. of units in residential flat buildings	139
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 25	Target 25

Certificate Prepared by

Name / Company Name: Integral Group Consulting Engineers Pty Ltd

ABN (if applicable): 27618557672

Description of project

Project address

Project name	Blacktown Hotel_02
Street address	34-46 Flushcombe Road Blacktown 2148
Local Government Area	Blacktown City Council
Plan type and plan number	deposited DP591040
Lot no.	8
Section no.	-

Project type

No. of residential flat buildings	1
No. of units in residential flat buildings	139
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m²)	1592.1
Roof area (m²)	581.5
Non-residential floor area (m²)	4766.3
Residential car spaces	147
Non-residential car spaces	59




Common area landscape

Common area lawn (m²)	0.0
Common area garden (m²)	137.0
Area of indigenous or low water use species (m²)	0.0

Assessor details

Assessor number	HERA10089
Certificate number	22Y7KF6XUU
Climate zone	28
Ceiling fan in at least one bedroom	No
Ceiling fan in at least one living room or other conditioned area	No

Project score

Water	 40	Target 40
Thermal Comfort	 Pass	Target Pass
Energy	 25	Target 25

Description of project

The tables below describe the dwellings and common areas within the project

Residential flat buildings - Building 1, 139 dwellings, 16 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
0201	1	59.9	0.0	0.0	0.0
0206	1	51.8	0.0	0.0	0.0
0211	1	59.9	0.0	0.0	0.0
0305	1	62.3	0.0	0.0	0.0
0310	2	76.1	0.0	0.0	0.0
0404	1	52.5	0.0	0.0	0.0
0409	2	72.6	0.0	0.0	0.0
0503	2	72.6	0.0	0.0	0.0
0508	1	52.5	0.0	0.0	0.0
0602	2	76.1	0.0	0.0	0.0
0607	1	54.5	0.0	0.0	0.0
0701	1	59.9	0.0	0.0	0.0
0706	1	51.8	0.0	0.0	0.0
0711	1	59.9	0.0	0.0	0.0
0805	1	62.3	0.0	0.0	0.0
0810	2	76.1	0.0	0.0	0.0
0904	1	52.5	0.0	0.0	0.0
0909	2	72.6	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
0202	2	76.1	0.0	0.0	0.0
0207	1	54.5	0.0	0.0	0.0
0301	1	59.9	0.0	0.0	0.0
0306	1	51.8	0.0	0.0	0.0
0311	1	59.9	0.0	0.0	0.0
0405	1	62.3	0.0	0.0	0.0
0410	2	76.1	0.0	0.0	0.0
0504	1	52.5	0.0	0.0	0.0
0509	2	72.6	0.0	0.0	0.0
0603	2	72.6	0.0	0.0	0.0
0608	1	52.5	0.0	0.0	0.0
0702	2	76.1	0.0	0.0	0.0
0707	1	54.5	0.0	0.0	0.0
0801	1	59.9	0.0	0.0	0.0
0806	1	51.8	0.0	0.0	0.0
0811	1	59.9	0.0	0.0	0.0
0905	1	62.3	0.0	0.0	0.0
0910	2	76.1	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
0203	2	72.6	0.0	0.0	0.0
0208	1	52.5	0.0	0.0	0.0
0302	2	76.1	0.0	0.0	0.0
0307	1	54.5	0.0	0.0	0.0
0401	1	59.9	0.0	0.0	0.0
0406	1	51.8	0.0	0.0	0.0
0411	1	59.9	0.0	0.0	0.0
0505	1	62.3	0.0	0.0	0.0
0510	2	76.1	0.0	0.0	0.0
0604	1	52.5	0.0	0.0	0.0
0609	2	72.6	0.0	0.0	0.0
0703	2	72.6	0.0	0.0	0.0
0708	1	52.5	0.0	0.0	0.0
0802	2	76.1	0.0	0.0	0.0
0807	1	54.5	0.0	0.0	0.0
0901	1	59.9	0.0	0.0	0.0
0906	1	51.8	0.0	0.0	0.0
0911	1	59.9	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
0204	1	52.5	0.0	0.0	0.0
0209	2	72.6	0.0	0.0	0.0
0303	2	72.6	0.0	0.0	0.0
0308	1	52.5	0.0	0.0	0.0
0402	2	76.1	0.0	0.0	0.0
0407	1	54.5	0.0	0.0	0.0
0501	1	59.9	0.0	0.0	0.0
0506	1	51.8	0.0	0.0	0.0
0511	1	59.9	0.0	0.0	0.0
0605	1	62.3	0.0	0.0	0.0
0610	2	76.1	0.0	0.0	0.0
0704	1	52.5	0.0	0.0	0.0
0709	2	72.6	0.0	0.0	0.0
0803	2	72.6	0.0	0.0	0.0
0808	1	52.5	0.0	0.0	0.0
0902	2	59.9	0.0	0.0	0.0
0907	1	54.5	0.0	0.0	0.0
1001	1	59.9	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
0205	1	62.3	0.0	0.0	0.0
0210	2	76.1	0.0	0.0	0.0
0304	1	52.5	0.0	0.0	0.0
0309	2	72.6	0.0	0.0	0.0
0403	2	72.6	0.0	0.0	0.0
0408	1	52.5	0.0	0.0	0.0
0502	2	76.1	0.0	0.0	0.0
0507	1	54.5	0.0	0.0	0.0
0601	1	59.9	0.0	0.0	0.0
0606	1	51.8	0.0	0.0	0.0
0611	1	59.9	0.0	0.0	0.0
0705	1	62.3	0.0	0.0	0.0
0710	2	76.1	0.0	0.0	0.0
0804	1	52.5	0.0	0.0	0.0
0809	2	72.6	0.0	0.0	0.0
0903	2	72.6	0.0	0.0	0.0
0908	1	52.5	0.0	0.0	0.0
1002	2	76.1	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1003	2	72.6	0.0	0.0	0.0
1008	1	52.5	0.0	0.0	0.0
1102	2	76.1	0.0	0.0	0.0
1107	1	54.5	0.0	0.0	0.0
1201	1	59.9	0.0	0.0	0.0
1206	1	51.8	0.0	0.0	0.0
1211	1	59.9	0.0	0.0	0.0
1305	1	62.3	0.0	0.0	0.0
1310	2	76.1	0.0	0.0	0.0
1504	2	79.4	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1004	1	52.5	0.0	0.0	0.0
1009	2	72.6	0.0	0.0	0.0
1103	2	72.6	0.0	0.0	0.0
1108	1	52.5	0.0	0.0	0.0
1202	2	76.1	0.0	0.0	0.0
1207	1	54.5	0.0	0.0	0.0
1301	1	59.9	0.0	0.0	0.0
1306	1	51.8	0.0	0.0	0.0
1311	1	59.9	0.0	0.0	0.0
1505	2	75.9	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1005	1	62.3	0.0	0.0	0.0
1010	2	76.1	0.0	0.0	0.0
1104	1	52.5	0.0	0.0	0.0
1109	2	72.6	0.0	0.0	0.0
1203	2	72.6	0.0	0.0	0.0
1208	1	52.5	0.0	0.0	0.0
1302	2	76.1	0.0	0.0	0.0
1307	1	54.5	0.0	0.0	0.0
1501	3	118.5	0.0	0.0	0.0
1506	3	91.2	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1006	1	51.8	0.0	0.0	0.0
1011	1	59.9	0.0	0.0	0.0
1105	1	62.3	0.0	0.0	0.0
1110	2	76.1	0.0	0.0	0.0
1204	1	52.5	0.0	0.0	0.0
1209	2	72.6	0.0	0.0	0.0
1303	2	72.6	0.0	0.0	0.0
1308	1	52.5	0.0	0.0	0.0
1502	3	91.2	0.0	0.0	0.0
1507	3	118.5	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1007	1	54.5	0.0	0.0	0.0
1101	1	59.9	0.0	0.0	0.0
1106	1	51.8	0.0	0.0	0.0
1111	1	59.9	0.0	0.0	0.0
1205	1	62.3	0.0	0.0	0.0
1210	2	76.1	0.0	0.0	0.0
1304	1	52.5	0.0	0.0	0.0
1309	2	72.6	0.0	0.0	0.0
1503	3	83.5	0.0	0.0	0.0

Description of project

The tables below describe the dwellings and common areas within the project

Common areas of unit building - Building 1

Common area	Floor area (m²)
Car park area (No. 1)	5637.4
Lift car (No.3)	-
Garbage room - Ground Level	64.6
Plant Rooms - Basements	158.5
Office	13.5
Ground floor lobby	70.5

Common area	Floor area (m²)
Lift car (No.1)	-
Lift car (No.4)	-
Garbage room - Apartment floors	69.0
Plant Rooms - Roof top	108.1
WC	13.6
Hallways	996.4

Common area	Floor area (m²)
Lift car (No.2)	-
Comms - Ground Level	11.3
Outdoor Community rooftop	612.4
Service room - Apartment floors	112.5
Store	13.6

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building 1

(a) Dwellings

- (i) Water
- (ii) Energy
- (iii) Thermal Comfort

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for multi-dwelling houses

3. Commitments for single dwelling houses

4. Commitments for common areas and central systems/facilities for the development (non-building specific)

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carried out. It is a condition of any development consent granted, or complying development certificate issued, for the proposed development, that BASIX commitments be complied with.

1. Commitments for Residential flat buildings - Building 1

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✓	✓	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✓	✓
(e) The applicant must install:			
(aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and		✓	✓
(bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✓	✓
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✓	
(g) The pool or spa must be located as specified in the table.	✓	✓	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✓	✓	✓

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	4 star (> 6 but <= 7.5 L/min)	4 star	4 star	4 star	no	-	4.5 star	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
None	-	-	-	-	-	-	-	-

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✓	✓	✓
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✓	✓
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✓	✓
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✓	✓	✓
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must: (aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and (bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✓ ✓	
(h) The applicant must install in the dwelling: (aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below; (bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and (cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✓ ✓ ✓	✓
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✓	

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	manual on / timer off	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual on / timer off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
1501, 1502, 1503, 1506, 1507	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
0202, 0203, 0209, 0210, 0302, 0303, 0309, 0310, 0402, 0403, 0409, 0410, 0502, 0503, 0509, 0510, 0602, 0603, 0609, 0610, 0702, 0703, 0709, 0710, 0802, 0803, 0809, 0810, 0902, 0903, 0909, 0910, 1002, 1003, 1009, 1010, 1102, 1103, 1109,	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
1110, 1202, 1203, 1209, 1210, 1302, 1303, 1309, 1310, 1504, 1505												
All other dwellings	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	yes	3.5 star	-	2 star	no	no

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.	✓		
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.		✓	
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✓	✓
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✓	✓	✓
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✓	✓	✓

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
0201	34.6	59.4
0202	21.3	52.3
0203	33.0	58.4
0204	15.7	61.3
0205	18.7	56.3
0206	12.9	31.7
0207	10.2	61.3
0208	25.5	58.4

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
0209	42.8	52.7
0210	25.4	54.7
0211	31.0	59.9
0303	35.2	60.3
0304	18.7	63.2
0305	22.7	55.7
0306	7.9	30.0
0307	14.1	59.4
0308	26.4	50.3
0309	43.7	56.4
0310	26.9	62.3
0311	33.7	55.5
0403	35.1	60.9
0404	17.0	52.9
0405	20.8	47.6
0406	14.8	29.7
0407	14.1	57.7
0408	28.0	51.0
0409	43.5	56.7
0410	26.7	62.4
0411	33.9	54.8
0501	36.6	54.5
0502	23.8	58.7
0503	35.7	60.0
0504	17.4	52.4
0505	21.1	46.9
0506	15.0	29.2

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
0508	28.4	50.1
0509	43.9	57.0
0510	27.3	61.6
0511	34.3	54.7
0601	37.7	54.1
0602	24.0	58.6
0603	35.8	60.1
0604	17.6	52.1
0605	21.3	46.4
0606	15.2	29.0
0608	28.6	49.4
0609	44.1	56.7
0610	27.5	61.4
0611	34.5	54.2
0701	37.9	53.8
0702	23.3	59.3
0703	36.1	60.5
0704	17.6	51.8
0705	21.5	46.0
0706	15.5	29.1
0707	14.8	55.8
0708	28.9	48.9
0709	44.3	56.2
0710	26.7	61.2
0711	34.8	53.6
0801	38.0	53.3
0802	24.4	57.9

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
0803	36.3	59.6
0806	15.6	28.9
0807	14.9	55.2
0809	44.5	56.3
0810	27.8	60.9
0811	34.9	53.6
0901	38.1	53.4
0902	24.5	58.0
0903	36.5	59.0
0906	15.7	28.7
0907	15.0	54.7
0909	44.6	55.9
0910	28.0	60.8
1001	39.6	50.4
1002	25.9	55.7
1003	37.8	56.0
1004	18.7	47.0
1005	22.9	41.2
1006	16.7	26.9
1007	15.9	50.8
1008	30.4	44.9
1104	18.8	46.9
1105	22.9	41.1
1106	16.8	26.6
1107	16.0	50.2
1108	30.5	44.9
1111	36.6	50.6

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
1204	18.9	46.4
1205	23.1	40.8
1206	16.9	26.5
1207	16.1	49.9
1208	30.7	44.3
1209	46.0	52.1
1210	29.5	57.6
1211	36.8	49.8
1301	43.9	52.0
1302	28.5	55.7
1303	38.2	55.3
1304	30.5	57.5
1305	28.8	47.8
1306	17.0	26.5
1307	18.4	51.0
1308	43.8	53.2
1309	46.1	52.4
1310	31.8	58.2
1311	40.5	51.3
1501	39.2	40.8
1502	33.7	50.1
1503	45.9	37.6
1504	32.1	46.8
1505	57.2	29.2
1506	40.3	47.7
1507	36.1	48.0
0301, 0401	37.4	55.0

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
0302, 0402	23.6	59.0
0507, 0607	14.4	57.1
0804, 0904	17.6	51.5
0805, 0905	21.6	45.5
0808, 0908	29.1	48.3
0911, 1011	35.1	53.3
1009, 1109	45.9	52.3
1010, 1110	29.5	57.9
1101, 1201	40.1	50.3
1102, 1202	26.1	55.3
All other dwellings	38.0	55.6

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✓	✓
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✓	✓	✓
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✓	✓	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✓	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✓	✓
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✓	✓

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	5000.0	To collect run-off from at least: - 250.0 square metres of roof area of buildings in the development - 0.0 square metres of impervious area in the development - 0.0 square metres of garden/lawn area in the development - 0.0 square metres of planter box area in the development (excluding, in each case, any area which drains to, or supplies, any other alternative water supply system).	- irrigation of 137.0 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site
Fire sprinkler system (No. 1)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✓	✓
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✓	✓
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✓	✓	✓

Common area	Common area ventilation system		Common area lighting		
	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Car park area (No. 1)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	light-emitting diode	zoned switching with motion sensor	No
Lift car (No.1)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No.2)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No.3)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No.4)	-	-	light-emitting diode	connected to lift call button	No
Comms - Ground Level	air conditioning system	none ie. continuous	light-emitting diode	manual on / manual off	No
Garbage room - Ground Level	ventilation exhaust only	-	light-emitting diode	manual on / manual off	No
Garbage room - Apartment floors	ventilation exhaust only	-	light-emitting diode	motion sensors	No
Outdoor Community rooftop	no mechanical ventilation	-	light-emitting diode	daylight sensors	No
Plant Rooms - Basements	ventilation exhaust only	thermostatically controlled	light-emitting diode	manual on / manual off	No
Plant Rooms - Roof top	ventilation exhaust only	none ie. continuous	light-emitting diode	manual on / manual off	No
Service room - Apartment floors	ventilation exhaust only	none ie. continuous	light-emitting diode	manual on / manual off	No
Office	air conditioning system	time clock or BMS controlled	light-emitting diode	motion sensors	No

	Common area ventilation system		Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
WC	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	manual on / timer off	No
Store	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	manual on / timer off	No
Ground floor lobby	air conditioning system	time clock or BMS controlled	light-emitting diode	time clocks	No
Hallways	ventilation supply only	time clock or BMS controlled	light-emitting diode	time clocks	No

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired boiler	Piping insulation (ringmain & supply risers): (a) Piping external to building: R1.0 (~38 mm); (b) Piping internal to building: R1.0 (~38 mm)
Lift (No. 1)	gearless traction with V V V F motor and regenerative drive	Number of levels (including basement): 22
Lift (No. 2)	gearless traction with V V V F motor and regenerative drive	Number of levels (including basement): 22
Lift (No. 3)	gearless traction with V V V F motor and regenerative drive	Number of levels (including basement): 22
Lift (No. 4)	gearless traction with V V V F motor and regenerative drive	Number of levels (including basement): 22

4. Commitments for common areas and central systems/facilities for the development (non-building specific)

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✓	✓
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✓	✓	✓
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✓	✓	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✓	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✓	✓
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✓	✓

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	4 star	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✓	✓
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✓	✓
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✓	✓	✓

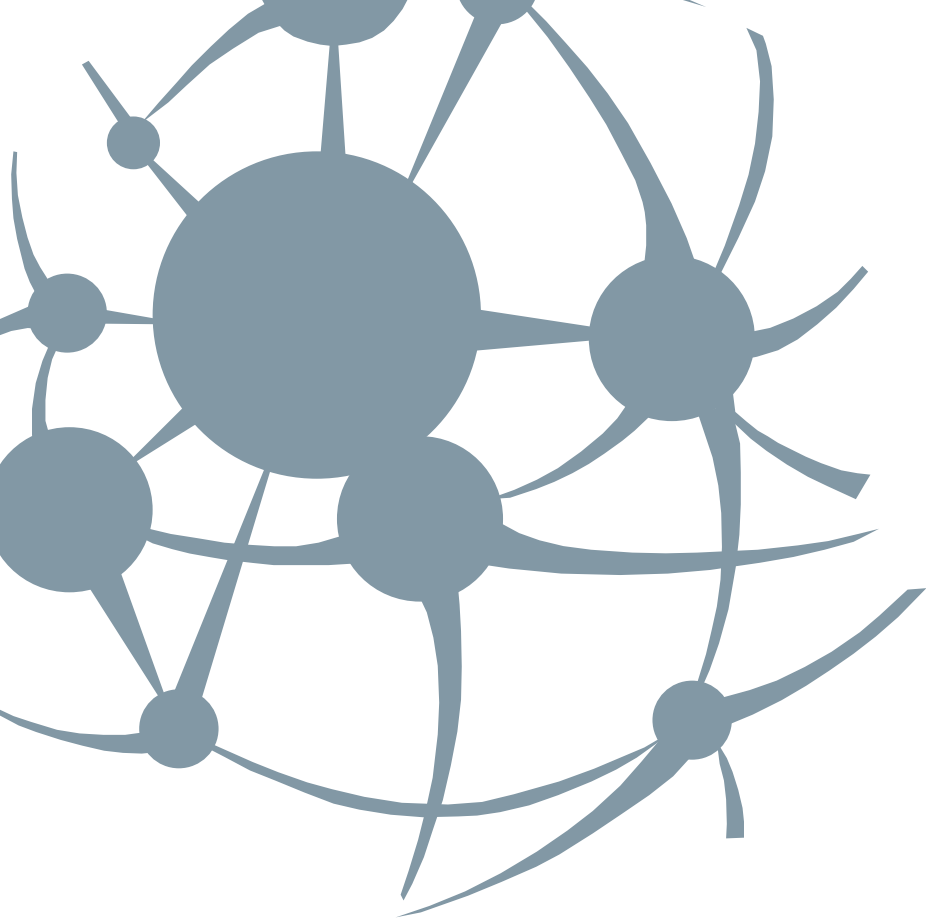
Central energy systems	Type	Specification
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 40.0 peak kW
Other	Building management system installed?: yes Active power factor correction installed?: yes	-

Notes

1. In these commitments, "applicant" means the person carrying out the development.
2. The applicant must identify each dwelling, building and common area listed in this certificate, on the plans accompanying any development application, and on the plans and specifications accompanying the application for a construction certificate / complying development certificate, for the proposed development, using the same identifying letter or reference as is given to that dwelling, building or common area in this certificate.
3. This note applies if the proposed development involves the erection of a building for both residential and non-residential purposes (or the change of use of a building for both residential and non-residential purposes). Commitments in this certificate which are specified to apply to a "common area" of a building or the development, apply only to that part of the building or development to be used for residential purposes.
4. If this certificate lists a central system as a commitment for a dwelling or building, and that system will also service any other dwelling or building within the development, then that system need only be installed once (even if it is separately listed as a commitment for that other dwelling or building).
5. If a star or other rating is specified in a commitment, this is a minimum rating.
6. All alternative water systems to be installed under these commitments (if any), must be installed in accordance with the requirements of all applicable regulatory authorities. NOTE: NSW Health does not recommend that stormwater, recycled water or private dam water be used to irrigate edible plants which are consumed raw, or that rainwater be used for human consumption in areas with potable water supply.

Legend

1. Commitments identified with a "✓" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).
2. Commitments identified with a "✓" in the "Show on CC/CDC plans and specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.
3. Commitments identified with a "✓" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled. (Note: a certifying authority must not issue an occupation certificate (either interim or final) for a building listed in this certificate, or for any part of such a building, unless it is satisfied that each of the commitments whose fulfilment it is required to monitor in relation to the building or part, has been fulfilled).



Contact:

David Arnott, Associate
david.arnott@integralgroup.com
+61 405 610 304

